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Guidelines for Microsection Preparation

An international standard developed by IPC

Association Connecting Electronics Industries

IPC®

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In May 1995 the IPC's Technical Activities Executive Committee (TAEC) adopted Principles of Standardization as a guiding principle of IPC's standardization efforts.

Standards Should:

- Show relationship to Design for Manufacturability (DFM) and Design for the Environment (DFE)
- Minimize time to market
- Contain simple (simplified) language
- Just include spec information
- Focus on end product performance
- Include a feedback system on use and problems for future improvement

Standards Should Not:

- Inhibit innovation
- Increase time-to-market
- Keep people out
- Increase cycle time
- Tell you how to make something
- Contain anything that cannot be defended with data

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Guidelines for Microsection Preparation

Developed by the Microsection Subcommittee (7-12) of the Testing Committee (7-10) of IPC

Users of this publication are encouraged to participate in the development of future revisions.

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Acknowledgment

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Guidelines for Microsection Preparation

1 SCOPE

Microsection preparation is a process. These guidelines discuss the many variables and problems associated with the process from sample removal to micro-etch. The guidelines do not promote any one vendor's process, but discuss the variables common to microsectioning.

The process variables and problems are organized so the reader can research a specific issue or overview the variables of a process area.

2 APPLICABLE DOCUMENTS

2.1 IPC[1]

IPC-2221 Generic Standard on Printed Board Design

IPC-2222 Sectional Design Standard for Rigid Organic Printed Boards

IPC-2223 Sectional Design Standard for Flexible Printed Boards

IPC-T-50 Terms and Definitions for Interconnecting and Packaging Electronic Circuits

IPC-TM-650 Test Methods Manual[2]

2.1.1 Microsectioning, Manual and Semi or Automatic

2.2.5 Dimensional Inspections Using Microsections

3 SAMPLE REMOVAL PROCESS

3.1 Sample Location

3.1.1 Coupon Test Strip Companies generally use a "home grown" or military conformance coupon for microsection inspection. IPC-2221 outlines the attributes a coupon test strip should exhibit based on the product type being built.

Benefits:

- Production parts are not lost due to microsection testing.
- The internal and external features are the same from panel to panel to facilitate Statistical Process Control (SPC) data collection.
- The strips may be used to screen product as required.
- The customer can correlate to your microsection results easier because you both sample in the same location on the same test design.

Drawbacks:

- Space is lost on the panel that could be used to build parts.
- The test strip may not be representative of the associated part.

3.1.2 Part The actual production parts are used for microsection inspection.

Benefits:

- Space is not wasted on the panel due to test strips.
- There are no paneling constraints that dictate where the test strip must be placed to preserve part correlation.
- There is less of an issue over how representative the test strip is to the associated part.

1. www.ipc.org
2. Current and revised IPC Test Methods are available on the IPC Web site (www.ipc.org/html/testmethods.htm)